

**Report of Remediation and Confirmation Sampling Activities**  
Former 76 Station 0353  
January 31, 2006

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**APPENDIX A**

**SOIL VAPOR EXTRACTION TEST PROTOCOL  
AND FIELD DATA**

## **Report of Remediation and Confirmation Sampling Activities**

Former 76 Station 0353

January 31, 2006

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### **APPENDIX A**

#### **SOIL VAPOR EXTRACTION TEST PROTOCOL AND FIELD TEST DATA**

A description of the vapor extraction test protocol and data acquisition procedures used during this phase of site assessment activities is presented below.

#### **TEST PROTOCOL**

One extraction well was connected to the vapor extraction unit and at least two other vapor extraction/monitoring wells were used as pressure drawdown observation points. During a series of tests, it was typical that a particular well functioned both as an extraction well and an observation well.

While air was extracted, the pressure level in the observation wells was monitored and recorded. Data were recorded as net drawdown from the initial soil air (atmospheric) pressure within the sealed well casing. Each test was conducted until vacuum effects nearly stabilized at the farthest observation point. Pressure drawdown data were then used in a modeling analysis to estimate soil air transmissibility. These parameters are necessary to determine the effective area of influence.

A total of four step tests and four constant rate tests were performed. Step tests typically included a minimum of four steps for vacuum and extraction flow rate to determine the optimum vacuum and flow rate capacity for each test horizon. Well Cluster VW-1A/B/C was utilized for extraction from Zone A (20 to 40 fbg), Zone B (45 to 65 fbg), and Zone C (70 to 90 fbg). Well MW-1A was used for extraction from Zone D (90 to 100 fbg).

For the step tests, near-steady-state vacuums and flows were achieved in approximately 1 to 3 hours for each test array. For the constant rate tests, near-steady-state vacuum levels in the observation wells were achieved within 30 to 90 minutes.

A total of 59 vapor samples for laboratory analysis were collected from 11 wells during the entire vapor extraction test.

#### **PRESSURE AND AIR FLOW MONITORING**

During the step and constant rate extraction tests, the vacuum for the extraction well was recorded with a magnehelic gauge fitted at the extraction well head. During extended length constant rate extraction tests, the vacuum for the extraction well was recorded with a magnehelic gauge fitted at the influent end of the blower. Well caps fitted with magnehelic pressure gauges with sensitivity levels as low as 0.01 in. H<sub>2</sub>O were used during all tests to record the pressure drawdown data from the observation wells. Prior to testing, the magnehelic gauges were calibrated to zero based on atmospheric pressure.

## **Report of Remediation and Confirmation Sampling Activities**

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During the step and constant rate extraction tests, airflow rates were obtained using a TSI™ Model 8355 air velocity meter connected at the extraction well head. During the extended length constant rate extraction tests, airflow rates were obtained using a TSI™ Model 8355 air velocity meter connected at the influent end of the vapor conduit hose.

### **FIELD MEASUREMENT OF HYDROCARBON CONCENTRATIONS**

Field measurements were obtained from the extraction well using either a Mini-Rae 2000™ photo-ionization detector or a Horiba™ hydrocarbon vapor analyzer. The Mini-Rae 2000™ provides digital readouts continuously, and can measure hydrocarbon concentrations up to 10,000 parts per million by volume (ppmv). The Horiba™ hydrocarbon vapor analyzer also provides digital readouts continuously, and can measure hydrocarbon concentrations up to 13,000 parts per million by volume as hexane.

### **VAPOR EXTRACTION TEST EQUIPMENT**

Vapor extraction testing activities at the site were conducted using the TRC Mobile Treatment System (MTS). The MTS unit is a truck mounted soil vapor extraction system that is capable of removing soil vapors from the subsurface at vapor flow rates of up to 313 actual cubic feet per minute (at 60 degrees Fahrenheit and 14.7 pounds per square inch). A high vacuum blower (total vacuum greater than 394 inches of water or up to 29 inches of mercury) was utilized to extract soil vapors from wells at the site. Extracted hydrocarbon vapors were abated using a regulatory permitted propane fired thermal oxidizer. Destruction efficiency for non-methane hydrocarbons is 99%+ calculated as hexane.

## VAPOR EXTRACTION TEST

Project No. \_\_\_\_\_

Site: 76-0353

Task No. \_\_\_\_\_

Date: 9/27/05

Start Time. 0130

Stop Time. \_\_\_\_\_

Well I.D.	Extraction Well		Observation Wells (Time)			
	VW-1A	Constant Rate Test	VW-2A	VW-2B	VW-3A	VW-3B (0130-0353)
Well 1A	VW-1B	Constant Rate Test	VW-2A	VW-2B	VW-3A	VW-3B (0410-0610)
Well 1D	VW-1C					
Well 1D						
Time (min)	Flow Rate (cfm)	HC Conc. (ppm)	Vacuum (inch H2O)			
0:00	VW-1A		VW-2A	VW-2B	VW-3A	VW-3B
0130 0:05			.19	.26	.07	.13
0140 0:10			.23	.30	.09	.15
0150 0:15			.27	.33	.11	.19
0200 0:20			.34	.30	.16	.24
0215 0:25			.33	.28	.19	.22
0230 0:30			.28	.32	.17	.21
0245 0:35			.37	.30	.19	.20
0300 0:40			.41	.28	.22	.21
0315 0:45			.39	.31	.20	.23
0330 0:50			.40	.30	.21	.21
0355	VW-1B		VW-2A	VW-2B	VW-3A	VW-3B
0410 1:00			.04	2.26	.05	1.95
0420 1:10			.02	2.51	.06	2.11
0430 1:20			.09	2.88	.08	2.32
0440 1:30			.02	2.99	.06	2.38
0455 1:40			.04	3.07	.07	2.43
0510 1:50			.03	3.15	.05	2.56
0525 2:00			.05	3.20	.07	2.62
0540 2:30			.03	3.35	.04	2.70
0555 3:00			.04	3.16	.04	2.60
0610 3:30			.03	3.10	.04	2.56
4:00	VW-1C		VW-2B	VW-2C	VW-3B	VW-3C
0640 4:30			1.91	1.68	.98	1.61
0650 5:00			1.10	1.80	.98	1.66
0700 6:00			1.15	1.82	.97	1.70
0710 7:00			1.28	2.01	1.14	1.90
0725 8:00			1.35	2.10	1.23	2.09
0740 9:00			1.46	2.23	1.27	2.08
0755 10:00			1.49	2.26	1.33	2.11
0810 12:00			1.55	2.31	1.38	2.10
0815 14:00			1.55	2.30	1.38	2.19
0840 16:00			1.54	2.30	1.38	2.20
18:00	MW-1A		VW-1C	VW-2C	MW-2	MW-3A
0910 20:00			1.00	.70	1.32	1.10
0930 25:00			1.09	.74	2.15	1.95
0940 30:00			1.03	.65	2.47	3.55
0950 40:00			.99	.66	2.77	5.34
1000 50:00			.96	.68	2.92	6.42
1020 60:00			1.04	.60	2.87	6.62
1035 70:00			.94	.53	2.74	6.57
1050 80:00			.86	.44	2.63	6.41
1105 90:00			.80	.42	2.57	6.16
1120 100:00			.74	.40	2.39	6.04

0630 VW-2B 62 / VW-2C 65 / VW-3B 56 / VW-3C 72

0915 VW-1C -79 / VW-2C .68 / MW-2 82 / MW-3A .03

Client: J. H. J. Inc.  
 Job #: 0353  
 Date: 9/26/05

**TRC**

Customer-Focused Solutions

MTS Unit #: 0934

CUMULATIVE WELLS

Time:

# MTS FIELD DATA

Sheet: 1 / 1  
 Project No.:  
 Task No.:  
 Technician: R.G., SMY

Start: 10:00 AM  
 End: 12:00 PM

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #1

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #2

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #3

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #4

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #5

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #6

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #7

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #8

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #9

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #10

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #11

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #12

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #13

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #14

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #15

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #16

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #17

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #18

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #19

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #20

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #21

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #22

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #23

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #24

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #25

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #26

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #27

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #28

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #29

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #30

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #31

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #32

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #33

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

EXTRACTION WELL #34

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):





**TRC****MTS FIELD DATA**

Client: Conoco Phillips  
 Site: 7L-0383  
 Date: 01/26/05 - 01/27/05

Customer-Focused Solutions  
 MTS Unit #: 0939

Project No.:  
 Task No.:  
 Technician: p2

Sheet: 4

## CUMULATIVE WELLS

Laptop Unit #:

EXTRACTION WELL #1

WELL ID: MW-1A

DTW (ft):

EXTRACTION WELL #2

WELL ID: MW-1B

DTW (ft):

EXTRACTION WELL #3

WELL ID: MW-1C

DTW (ft):

EXTRACTION WELL #4

WELL ID: MW-1D

DTW (ft):

EXTRACTION WELL #5

WELL ID: MW-1E

DTW (ft):

EXTRACTION WELL #6

WELL ID: MW-1F

DTW (ft):

EXTRACTION WELL #7

WELL ID: MW-1G

DTW (ft):

EXTRACTION WELL #8

WELL ID: MW-1H

DTW (ft):

EXTRACTION WELL #9

WELL ID: MW-1I

DTW (ft):

EXTRACTION WELL #10

WELL ID: MW-1J

DTW (ft):

EXTRACTION WELL #11

WELL ID: MW-1K

DTW (ft):

EXTRACTION WELL #12

WELL ID: MW-1L

DTW (ft):

EXTRACTION WELL #13

WELL ID: MW-1M

DTW (ft):

EXTRACTION WELL #14

WELL ID: MW-1N

DTW (ft):

EXTRACTION WELL #15

WELL ID: MW-1O

DTW (ft):

EXTRACTION WELL #16

WELL ID: MW-1P

DTW (ft):

EXTRACTION WELL #17

WELL ID: MW-1Q

DTW (ft):

EXTRACTION WELL #18

WELL ID: MW-1R

DTW (ft):

EXTRACTION WELL #19

WELL ID: MW-1S

DTW (ft):

EXTRACTION WELL #20

WELL ID: MW-1T

DTW (ft):

EXTRACTION WELL #21

WELL ID: MW-1U

DTW (ft):

EXTRACTION WELL #22

WELL ID: MW-1V

DTW (ft):

EXTRACTION WELL #23

WELL ID: MW-1W

DTW (ft):

EXTRACTION WELL #24

WELL ID: MW-1X

DTW (ft):

EXTRACTION WELL #25

WELL ID: MW-1Y

DTW (ft):

EXTRACTION WELL #26

WELL ID: MW-1Z

DTW (ft):

EXTRACTION WELL #27

WELL ID: MW-1AA

DTW (ft):

EXTRACTION WELL #28

WELL ID: MW-1AB

DTW (ft):

EXTRACTION WELL #29

WELL ID: MW-1AC

DTW (ft):

EXTRACTION WELL #30

WELL ID: MW-1AD

DTW (ft):

EXTRACTION WELL #31

WELL ID: MW-1AE

DTW (ft):

EXTRACTION WELL #32

WELL ID: MW-1AF

DTW (ft):

EXTRACTION WELL #33

WELL ID: MW-1AG

DTW (ft):

EXTRACTION WELL #34

WELL ID: MW-1AH

DTW (ft):

EXTRACTION WELL #35

WELL ID: MW-1AI

DTW (ft):

EXTRACTION WELL #36

WELL ID: MW-1AJ

DTW (ft):

EXTRACTION WELL #37

WELL ID: MW-1AK

DTW (ft):

EXTRACTION WELL #38

WELL ID: MW-1AL

DTW (ft):

EXTRACTION WELL #39

WELL ID: MW-1AM

DTW (ft):

EXTRACTION WELL #40

WELL ID: MW-1AN

DTW (ft):

EXTRACTION WELL #41

WELL ID: MW-1AO

DTW (ft):

EXTRACTION WELL #42

WELL ID: MW-1AP

DTW (ft):

EXTRACTION WELL #43

WELL ID: MW-1AQ

DTW (ft):

EXTRACTION WELL #44

WELL ID: MW-1AR

DTW (ft):

EXTRACTION WELL #45

WELL ID: MW-1AS

DTW (ft):

EXTRACTION WELL #46

WELL ID: MW-1AT

DTW (ft):

EXTRACTION WELL #47

WELL ID: MW-1AU

DTW (ft):

EXTRACTION WELL #48

WELL ID: MW-1AV

DTW (ft):

EXTRACTION WELL #49

WELL ID: MW-1AW

DTW (ft):

EXTRACTION WELL #50

WELL ID: MW-1AX

DTW (ft):

EXTRACTION WELL #51

WELL ID: MW-1AY

DTW (ft):

EXTRACTION WELL #52

WELL ID: MW-1AZ

DTW (ft):

EXTRACTION WELL #53

WELL ID: MW-1BA

DTW (ft):

EXTRACTION WELL #54

WELL ID: MW-1BB

DTW (ft):

EXTRACTION WELL #55

WELL ID: MW-1BC

DTW (ft):

EXTRACTION WELL #56

WELL ID: MW-1BD

DTW (ft):

EXTRACTION WELL #57

WELL ID: MW-1BE

DTW (ft):

EXTRACTION WELL #58

WELL ID: MW-1BF

DTW (ft):

EXTRACTION WELL #59

WELL ID: MW-1BG

DTW (ft):

EXTRACTION WELL #60

WELL ID: MW-1BH

DTW (ft):

EXTRACTION WELL #61

WELL ID: MW-1BI

DTW (ft):

EXTRACTION WELL #62

WELL ID: MW-1BJ

DTW (ft):

EXTRACTION WELL #63

WELL ID: MW-1BK

DTW (ft):

EXTRACTION WELL #64

WELL ID: MW-1BL

DTW (ft):

EXTRACTION WELL #65

WELL ID: MW-1BM

DTW (ft):

EXTRACTION WELL #66

WELL ID: MW-1BN

DTW (ft):

EXTRACTION WELL #67

WELL ID: MW-1BO

DTW (ft):

EXTRACTION WELL #68

WELL ID: MW-1BP

DTW (ft):

EXTRACTION WELL #69

WELL ID: MW-1BQ

DTW (ft):

EXTRACTION WELL #70

WELL ID: MW-1BR

DTW (ft):

EXTRACTION WELL #71

WELL ID: MW-1BS

DTW (ft):

EXTRACTION WELL #72

WELL ID: MW-1BT

DTW (ft):

EXTRACTION WELL #73

WELL ID: MW-1BU

DTW (ft):

EXTRACTION WELL #74

WELL ID: MW-1BV

DTW (ft):

EXTRACTION WELL #75

WELL ID: MW-1BW

DTW (ft):

EXTRACTION WELL #76

WELL ID: MW-1BX

DTW (ft):

EXTRACTION WELL #77

WELL ID: MW-1BY

DTW (ft):

EXTRACTION WELL #78

WELL ID: MW-1BZ

DTW (ft):

EXTRACTION WELL #79

WELL ID: MW-1CA

DTW (ft):

EXTRACTION WELL #80

WELL ID: MW-1CB

DTW (ft):

EXTRACTION WELL #81

WELL ID: MW-1CC

DTW (ft):

EXTRACTION WELL #82

WELL ID: MW-1CD

DTW (ft):

EXTRACTION WELL #83

WELL ID: MW-1CE

DTW (ft):

EXTRACTION WELL #84

WELL ID: MW-1CF

DTW (ft):

EXTRACTION WELL #85

WELL ID: MW-1CG

DTW (ft):

EXTRACTION WELL #86

WELL ID: MW-1CH

DTW (ft):

EXTRACTION WELL #87

WELL ID: MW-1CI

DTW (ft):

EXTRACTION WELL #88

WELL ID: MW-1CJ

DTW (ft):

EXTRACTION WELL #89

WELL ID: MW-1CK

DTW (ft):

EXTRACTION WELL #90

WELL ID: MW-1CL

DTW (ft):

EXTRACTION WELL #91

WELL ID: MW-1CM

DTW (ft):

EXTRACTION WELL #92

WELL ID: MW-1CN

DTW (ft):

EXTRACTION WELL #93

WELL ID: MW-1CO

DTW (ft):

EXTRACTION WELL #94

WELL ID: MW-1CP

DTW (ft):

EXTRACTION WELL #95

WELL ID: MW-1CQ

DTW (ft):

EXTRACTION WELL #96

WELL ID: MW-1CR

DTW (ft):

EXTRACTION WELL #97

WELL ID: MW-1CS

DTW (ft):

EXTRACTION WELL #98

WELL ID: MW-1CT

DTW (ft):

EXTRACTION WELL #99

WELL ID: MW-1CU

DTW (ft):

EXTRACTION WELL #100



**TRC**Client: Conoco Phillips  
Site: 76-0353  
Date: 9/27/05**MTS FIELD DATA**Customer-Focused Solutions  
0934

Project No.:

Task No.:

Technician:

Site: 6 / Laptop Unit #: PL-DYAS

EXTRACTION WELL # 2

TOTALIZER START (gallons): VW-1CTOTALIZER END (gallons): DTW(0)STACK HC CONCENTRATION (ppmv): DEPTH to FP (ft)TOTAL DEPTH (ft): CONSTANT RATE TESTCASING DIAM. (in.): 2"

EXTRACTION WELL # 1

WELL ID: VW-1BTime: 0410Time: 0420Time: 0430Time: 0440Time: 0455Time: 0510Time: 0525Time: 0540Time: 0555Time: 0610Time: 0640Time: 0650Time: 0700Time: 0710Time: 0725Time: 0740Time: 0755Time: 0810Time: 0825Time: 0840

## CUMULATIVE WELLS

Laptop Unit #: 0934

EXTRACTION WELL # 1

WELL ID: VW-1BTime: 0410Time: 0420Time: 0430Time: 0440Time: 0455Time: 0510Time: 0525Time: 0540Time: 0555Time: 0610Time: 0640Time: 0650Time: 0700Time: 0710Time: 0725Time: 0740Time: 0755Time: 0810Time: 0825Time: 0840

Time (24 hr.)	VACUUM SIDE DATA			PRESSURE SIDE DATA			System Temp (deg. F)	System Flow Rate (scfm)	System Flow Rate (in. H <sub>2</sub> O)	Extraction wells open:	WELL HEAD PRESSURE (in. Hg)	Flow DP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Slinger Depth (ft)	Slinger Depth (ft)	
	Total Well Flow (in. H <sub>2</sub> O)	Total Well Flow Rate (scfm)	Manifld Vacuum (in. of Hg)	Total Well Int. Conc. (ppmv)	System Flow Rate (scfm)	System DP (in. H <sub>2</sub> O)											
0410			13.8		.70	6.6	1445 #1						2.0	1			
0420			13.6		.75	7.1	1430						1.5				
0430			13.8		.72	7.0	1447						1.5				
0440			13.6		.75	7.1	1450						1.5				
0455			13.6		.78	7.2	1460						1.5				
0510			13.9		.76	7.1	1446						1.5				
0525			13.8		.78	7.2	1448						1.5				
0540			14.0		.72	7.0	1480						1.5				
0555			13.9		.70	6.9	1439						1.0	1			
0610			13.9		.70	6.9	1440						1.0	1			
0640			13.5		.70	6.9	1439	2								1.0	1
0650			13.6		.72	6.9	1442									.50	
0700			13.6		.70	6.6	1440									.50	
0710			13.6		.70	6.9	1436									.50	
0725			13.6		.70	7.1	1440									.50	
0740			13.6		.80	7.4	1437									.50	
0755			13.6		.81	7.4	1441									.50	
0810			13.5		.83	7.7	1438									.50	
0825			13.5		.82	7.2	1480									.50	
0840			13.4		.80	7.2	1441	2								.50	

NOTES: ⑧ D530 added water to well tank.

0555 H<sub>2</sub>O Temp @ 110°  
 0610 H<sub>2</sub>O Temp @ 110°  
 0620 Pump level 22' 39%  
 0620 Add H<sub>2</sub>O to well tank



TRC

Client: Colorado Willis, Inc.  
Site: Silver 76th 0353  
Date: 9.27.05

Customer-Focused Solutions

MTS Unit #: 0934

## MTS FIELD DATA

Sheet: 8A /

Project No.:

Task No.:

Technician: Dymas, ST

## CUMULATIVE WELLS

TOTALIZER START (gallons):

TOTALIZER END (gallons):

STACK HC CONCENTRATION (ppmv):

Time:

Time:

Time:

Time:

WELL ID: JVW-1A

DTW (ft):

DEPTH (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

CASING DIAM. (in):

EXTRACTION WELL #1

EXTRACTION WELL #2

JVW - 2A

JVW - 2B

EXTRACTION WELL #3

EXTRACTION WELL #4

JVW - 4A

JVW - 4B

EXTRACTION WELL #5

EXTRACTION WELL #6

JVW - 6A

JVW - 6B

EXTRACTION WELL #7

EXTRACTION WELL #8

JVW - 8A

JVW - 8B

EXTRACTION WELL #9

EXTRACTION WELL #10

JVW - 10A

JVW - 10B

EXTRACTION WELL #11

EXTRACTION WELL #12

JVW - 12A

JVW - 12B

EXTRACTION WELL #13

EXTRACTION WELL #14

JVW - 14A

JVW - 14B

EXTRACTION WELL #15

EXTRACTION WELL #16

JVW - 16A

JVW - 16B

EXTRACTION WELL #17

EXTRACTION WELL #18

JVW - 18A

JVW - 18B

EXTRACTION WELL #19

EXTRACTION WELL #20

JVW - 20A

JVW - 20B

EXTRACTION WELL #21

EXTRACTION WELL #22

JVW - 22A

JVW - 22B

EXTRACTION WELL #23

EXTRACTION WELL #24

JVW - 24A

JVW - 24B

EXTRACTION WELL #25

EXTRACTION WELL #26

JVW - 26A

JVW - 26B

VACUUM SIDE DATA

System Flow Rate (scfm)

Total Well Flow Dp (in. H<sub>2</sub>O)

Well Int. Conc. (ppmv)

Manifold Int. of Hg)

System Flow Rate (scfm)

DP (in. H<sub>2</sub>O)

System Int. Conc. (ppmv)

Temp (deg. F)

System Vacum (in. of Hg)

HC Conc. (ppmv)

Flow Rate (scfm)

DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

Vacuum (in. of Hg)

Slinger Depth (ft)

Depth (ft)

PRESSURE SIDE DATA

System Flow Rate (scfm)

Total Well Flow Dp (in. H<sub>2</sub>O)

Well Int. Conc. (ppmv)

Manifold Int. of Hg)

System Flow Rate (scfm)

DP (in. H<sub>2</sub>O)

System Int. Conc. (ppmv)

Temp (deg. F)

System Vacum (in. of Hg)

HC Conc. (ppmv)

Flow Rate (scfm)

DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

Vacuum (in. of Hg)

Slinger Depth (ft)

Depth (ft)

NOTES:

(113) Took taller samples JVW-1A, 2A, 3A

(329) Closed breaker due to H2 - HC from low

(329) Add tape to tank

24/25 took samples over 1B and 2B

## MTS Field Data

76 # 0353

Site: 927-05  
Date:

Continuation Sheet

Extraction Well # 3  
VW-3AExtraction Well # 4  
VW-1BExtraction Well # 5  
VW-2B

Project No.:

	Extraction Well # 4										Extraction Well # 5										Extraction Well # 6					
	Extraction Well # 3					Extraction Well # 4					Extraction Well # 5					Extraction Well # 6										
	Time (24 hr.)	Flow AP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Flow AP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Flow AP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Flow AP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Flow AP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Slinger Depth (ft)	Slinger Depth (ft)	Slinger Depth (ft)	
1145	95	78	32	12.8	1'																					
1245																										
1345																										
1445	125	93	410	12.8		1.00	83	440	13.5		1.35	97	860	10.7												
1545	.95	81	40	12.8		.85	76	310	13.5		1.35	97	710	10.7												
1645	.90	78	46	12.8		.95	81	360	13.4		1.25	93	600	10.6												
1745	.90	78	46	12.8		.85	76	340	13.4		125	93	530	10.7												
1845	.90	78	40	13.0		.83	75	340	13.5		1.25	93	500	10.7												
1945																										
2045																										
2145																										

Notes:





Customer-focused Solutions

MTS Field Data

Continuation Sheet

Site: Farmy 76 Station 0353  
Date: 9/27/05 9/28/05

Date: 9/27/05 9/28/05

Extraction Well # 3

1110-33

Project No.:

104

Extraction Well #

卷之三

1085

**TRC**

Client: Connie Phillips

Site: 0353  
Date: 9-28-2005Customer-Focused Solutions  
MTS Unit #: 934f**MTS FIELD DATA**

TOTALIZER START (gallons):

Time:

0 Time:  
STACK HC CONCENTRATION (ppmv):

WELL ID: VW-1A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

## CUMULATIVE WELLS

## EXTRACTION WELL #1

## EXTRACTION WELL #2

Laptop Unit #: RW-2A

RW-2A

Project No.:

Task No.:

Technician:

RH, RG, PL

Sheet: 10A/1

## VACUUM SIDE DATA

Time (24 hr.)	Total Well Flow DP (in. H2O)	Total Well Flow Rate (scfm)	Manifold Vacuum (in. of Hg.)	Manifold Vacuum (in. of Hg.)	System Flow DP (in. H2O)	System Flow Rate (scfm)	System Temp deg. E	System Inf. Conc. (ppmv)	Extraction wells open:	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg.)	Stinger Depth (ft)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg.)	Stinger Depth (ft)	
0715			3.7	2.55	138	140	1450	1-5												
0745			4.0	2.70	142	160	1436		.89	78	140	13.4			1.40	99	80	9.5		
0815			4.0	2.65	141	170	1446													
0845			3.0	3.10	153	180	1450		1.63	107	130	13.0			1.79	113	90	8.8		
0915			3.0	2.60	139	180	1448													
0945			3.0	2.60	139	180	1450		1.60	107	130	13.2			1.70	110	80	9.0		
1015			3.0	2.55	138	170	1450													
1045			2.9	2.60	139	150	1448		.89	78	140	13.3			1.50	103	80	9.0		
1115			2.9	2.61	139	160	1450													
1145			2.9	120°	2.60	139	160	1448		.80	71	170	13.5			1.40	96	110	9.1	
1215			2.9	120°	2.60	139	160	1448												
1245			3.0	105°	2.45	135	170	1447												
1315			3.0	120°	2.50	132	170	1447		.75	71	170	13.7			1.35	98	100	9.2	
1345			3.0	120°	2.45	130	160	1447												
1415			3.0	118°	2.45	130	160	1448		.75	69	160	13.7			1.35	94	100	9.2	
1445			3.0	118°	2.45	130	160	1447												
1515			3.0	118°	2.45	130	160	1449		.75	69	160	13.7			1.35	94	100	9.2	
1545			3.0	118°	2.45	130	150	1446												
1615			3.0	118°	2.45	130	150	1448		.75	69	150	13.6			1.40	94	90	9.2	
1645			2.9	118°	2.45	130	150	1447		.75	69	160	13.5			1.40	96	90	9.2	

NOTES: System off @ 0810 for subsurface propane deliv. 120 Gallons 9-28-05 Rkt system on @ 0830

11:45 Long side lines were not sealed off from main gas line RL  
12:10 Changed flow -3A + VW-3B  
12:25 Assess Sust H2O

Site: 0353  
Date: 9-29-05

Customer-Focused Solutions

Extraction Well # 3		Extraction Well # 4		Extraction Well # 5		Extraction Well #	
Well ID:	VW-3A / 3B	Well ID:	VW-1B	Well ID:	VW-2B	Well ID:	
DTW (ft):		DEPTH TO FP (ft):		TOTAL DEPTH (ft):		CASING DIA. (in):	
Time (24 hr.)	Flow ΔP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow ΔP (in. H2O)	Flow Rate (scfm)
0715	1.65	109	10	13.0		1.75	112
0745	1.65	109	10	13.0	260	13.5	1.95
0815	1.61	107	20	12.6		1.62	107
0845	1.61	107	20	12.6	240	13.1	1.75
0915							
0945	1.60	107	20	12.8		1.62	107
1015					240	13.0	1.80
1045	.92	79	20	12.8		.87	77
1115					240	13.4	1.25
1145	.88	74	50	13.1		.70	66
1215	VW-3B				270	13.6	1.20
1245	.80	74	60	13.4		.70	69
1315					270	13.8	1.10
1345	.70	66	60	13.3		.75	69
1415					270	14.0	1.15
1445	.75	69	60	13.4		.75	69
1515					270	13.9	1.10
1545	.85	74	60	13.3		.75	69
1615					270	13.9	1.15
1645	.75	69	60	13.2		.75	69
					270	13.8	1.15

Notes:

Client: Conoco Phillips  
 Site: 03533  
 Date: 09-28-05-9/29/05

# TRC MTS FIELD DATA

Customer-Focused Solutions  
 MTS Unit #: 0234

Sheet: 1/A 1:  
 Project No.:  
 Task No.:  
 Technician: PL

CUMULATIVE WELLS												EXTRACTION WELL #1												EXTRACTION WELL #2											
TOTALIZER START (gallons):			Time:			WELL ID: <u>VW 1A</u>			DTW (ft):			DEPTH to FP (ft):			TOTAL DEPTH(ft):			CASING DIAM. (in.):			WELL ID: <u>VW - 2 A</u>			DTW (ft):			DEPTH to FP (ft):			TOTAL DEPTH(ft):					
Total Well Flow (in. H2O)	Total Well Flow Rate (scfm)	Well Inf. Conc.	Manifold Vacuum (in. of Hg)	Seal Temp	System Flow DP (in. H2O)	System Flow Rate (scfm)	System Inf. Conc. (ppmv)	System Temp (deg. F)	Extraction wells open:	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)						
Time (24 hr.)	Time	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:	Time:					
17/15				3.0	119°	2.50	132	150	1448	15	.70	69	150	13.6	1	1.25	94	90	9.2	/															
17/45				2.9	105°	2.95	131	150	1447																										
18/15				3.0	107°	2.90	133	160	1443																										
18/45				3.0	109°	2.45	134	150	1445																										
19/15				3.0	110°	2.45	134	160	1448																										
19/45				3.0	1110	2.50	136	150	1447																										
20/15				2.9	111°	2.50	134	150	1445																										
20/45				2.9	112°	2.50	134	160	1443																										
21/15				3.0	112°	2.45	134	150	1447																										
21/45				3.0	117°	2.45	134	160	1449																										
22/15				2.9	117°	2.45	134	160	1449																										
22/45				3.0	113°	2.50	136	150	1445																										
23/15				3.0	115°	2.50	134	160	1448																										
23/45				3.0	113°	2.50	134	160	1444																										
23/95				3.0	113°	2.45	134	150	1442																										
00/15				2.9	1100	2.50	136	140	1448																										
00/45				3.0	1129	2.48	135	150	1443																										
01/15				2.9	1120	2.50	136	150	1446																										
01/45				3.0	1100	2.45	134	160	1450																										
02/15				3.0	1120	2.48	135	140	1447																										
02/45				3.0	1120	2.40	136	150	1445																										
Notes: <u>ADDED Seal 1720 1730</u>																																			

**TRC**

Customer-Focused Solutions

Site: 0353  
Date: 01/26/05 - 01/27/05**MTS FIELD DATA**

Continuation Sheet

Extraction Well #

Project No.:

Extraction Well #	Extraction Well #
VW - 33	VW - 10
DEPTH TO FP (ft.)	
TOTAL DEPTH (ft.)	
CASING DIA. (in.)	

Extraction Well #	Extraction Well #
VW - 26	VW - 26
Well ID:	
DTW (ft.)	
DEPTH TO FP (ft.)	
TOTAL DEPTH (ft.)	
CASING DIA. (in.)	

Time (24 hr.)	Flow $\Delta P$ (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft.)	Flow $\Delta P$ (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft.)	Flow $\Delta P$ (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft.)
17:15	.80	74	60	13.3	70	.70	68	260	13.8	1	1.05	86	250	11.0	1
17:45	.70	68	60	13.3	75	.71	70	13.9	1	1.10	88	260	11.1	1	1
18:15	.80	74	60	13.2	75	.71	70	13.8	1	1.10	88	260	11.1	1	1
18:45	.85	74	70	13.0	75	.71	70	13.8	1	1.10	88	260	11.1	1	1
19:15	.80	74	70	13.1	80	.74	74	260	13.5	1	1.10	88	250	11.1	1
19:45	.85	74	70	13.0	80	.74	74	260	13.6	1	1.15	89	250	11.0	1
20:15	.85	74	60	13.1	80	.74	74	260	13.6	1	1.10	88	250	11.1	1
20:45	.80	74	70	13.1	80	.74	74	260	13.5	1	1.10	88	260	11.1	1
21:15	.85	74	70	13.0	80	.74	74	260	13.5	1	1.10	88	250	11.1	1
21:45	.85	74	70	13.0	80	.74	74	260	13.6	1	1.10	88	260	11.1	1
22:15	.85	74	60	13.1	80	.74	74	260	13.6	1	1.10	88	250	11.1	1
22:45	.80	74	70	13.2	80	.74	74	260	13.6	1	1.10	88	260	11.1	1
23:15	.80	74	70	13.2	80	.74	74	260	13.6	1	1.10	88	260	11.1	1
23:45	.80	74	70	13.2	80	.74	74	260	13.6	1	1.10	88	260	11.1	1
00:15	.80	74	70	13.6	75	.71	70	13.8	1	1.15	89	250	11.0	1	1
00:45	.80	74	70	13.6	75	.71	70	13.8	1	1.10	88	250	11.0	1	1
01:15	.80	74	70	13.6	75	.71	70	13.8	1	1.10	88	250	11.2	1	1
01:45	.80	74	60	13.2	80	.74	74	270	13.8	1	1.10	88	260	11.0	1
02:15	.85	74	60	13.2	80	.74	74	270	13.8	1	1.10	88	260	11.0	1

Notes:

**TRC**

Customer Focused Solutions

MTS Unit #: 0934

Client: Amoco Phillips  
Site: #353  
Date: 9-29-05**MTS FIELD DATA**

Sheet: 12A /  
 Project No.:  
 Task No.:  
 Technician: PL, KG

## CUMULATIVE WELLS

TOTALIZER START (gallons): Time: WELL ID: VU-7A EXTRACTION WELL #2  
 TOTALIZER END (gallons): Time: DTW (ft): VU-2A  
 STACKING CONCENTRATION (ppmv): DEPTH to FP (ft):  
 TOTAL DEPTH(ft):

## EXTRACTION WELL #1

Time: WELL ID: VU-7A  
 DTW (ft):  
 DEPTH to FP (ft):  
 TOTAL DEPTH(ft):

## VACUUM SIDE DATA

Time (24 hr.)	Total Well Flow (in. H2O)	Total Well Flow Rate (scfm)	Manifold Vacuum (in. of Hg)	Total Test Gasflow <sup>o</sup>	System Flow DP (in. H2O)	System Flow Rate (scfm)	System Inf. Conc. (ppmv)	System Temp (deg. F)	Extraction wells open:	PRESSURE SIDE DATA				Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Stringer Depth (ft)
										System In. Conc. (ppmv)	System Flow Rate (scfm)	System Temp (deg. F)	HC Conc. (ppmv)						
03:55			2.9	110°	2.50	134	160	1449	1-5					1				1'	
03:55			3.0	112°	2.48	135	150	1443		78	72	160	13.6		1.35	97	110	9.4	
04:55			2.9	112°	2.50	134	150	1445											
04:55			3.0	110°	2.50	134	160	1448		80	73	160	13.6		1.35	97	110	9.4	
05:55			3.0	110°	1.98	135	150	1450											
05:55			3.0	108°	2.50	134	160	1446		78	72	150	13.5		1.40	99	110	9.5	
6:15			3.0	110°	2.50	131	150	1443											
6:45			3.0	118°	1.0°	9.50	131	1446		75	69	150	13.5		1.35	94	100	9.3	
7:15			2.8	118°	1.12°	2.50	131	140	1447										
7:45			2.9	118°	1.12	2.60	134	140	1448		80	71	160	13.6		1.40	94	90	9.3
8:15			2.9	118°	1.12	2.60	134	130	1446										
8:45			2.9	120	115	2.60	134	160	1448										
9:15			2.9	122	118	2.60	134	160	1446										
9:45			2.9	122	118	2.60	134	160	1448										
10:15			3.0	124	118	2.60	134	160	1446										
10:45			3.0	124	118	2.40	134	150	1447										
11:15			3.0	126	120	2.60	134	160	1447										
11:45			3.0	125	120	2.60	134	160	1444										
12:15			3.0	125	120	2.40	134	150	1449										
12:45			3.0	125	119	2.55	133	150	1446										

NOTES: ① P 530 alloy Seal Water.  
 (44:45) Gas and 9-24-05 at 7:00 AM short down 7 min.  
 Calibrated to 0 bar 8:30 AM

Site: 0353 Date: 05-29-03

Customer-Focused Solutions

Extraction Well #		Extraction Well #		Extraction Well #		Extraction Well #	
Well ID:	VW-3B	VW-1B	VW-2A	VW-2B	VW-2C	VW-2D	VW-2E
DTW (ft):							
DEPTH TO FP (ft):							
TOTAL DEPTH (ft):							
CASING DIA. (in.):							
Time (24 hr.)	Flow ΔP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow ΔP (in. H2O)	Flow Rate (scfm)
03:45	.80	74	60	13.4	7'	.75	71
04:45	.85	76	70	13.2	75	.71	270
05:45	.85	76	70	13.1	80	.73	260
6:45	.80	71	70	13.3	.75	69	250
7:45	.85	74	80	13.3	.80	71	220
8:45	.85	74	90	13.3	.80	71	230
9:45	.90	76	100	13.3	.80	71	230
10:45	.90	76	90	13.3	.85	74	240
11:45	.90	76	90	13.3	.85	74	240
12:45	.90	76	80	13.3	.80	71	240
Notes:							

12/8

**TRC**Client: Career Phil. Inc.  
Site: 03533  
Date: 9-29-05

Customer-Focused Solutions

MTS Unit #: 0934**MTS FIELD DATA**Project No.: 13 A 1

Task No.:

**CUMULATIVE WELLS**

TOTALIZER START (gallons):

TOTALIZER END (gallons):

STACK HC CONCENTRATION (ppmv):

Time:

Time:

Time:

**EXTRACTION WELL #1**WELL ID: VW - 1 A

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

**EXTRACTION WELL #2**WELL ID: VW - 2 A

P1

CASING DIAM. (in.):

**VACUUM SIDE DATA****PRESSURE SIDE DATA**

System Flow Rate (scfm)

System Flow Rate (in. H<sub>2</sub>O)

Extraction wells open:

System Temp (deg. F)

System Inf. Conc. (ppmv)

System Vacuum (in. of Hg.)

Slinger Depth (ft)

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

Vacuum (in. of Hg.)

Total Well Flow (in. H<sub>2</sub>O)

Total Well Flow Rate (scfm)

Manifold Vacuum (in. of Hg.)

Manifold Inf. Conc. (ppmv)

Well Temp (deg. F)

Sling Temp (deg. F)

Sling DP (in. H<sub>2</sub>O)

Sling Flow Rate (scfm)

Slinger Depth (ft)

Slinger Depth (in.)

Time (24 hr.)	Total Well Flow (in. H <sub>2</sub> O)	Total Well Flow Rate (scfm)	Manifold Vacuum (in. of Hg.)	Well Temp (deg. F)	Sling Temp (deg. F)	System Flow Rate (scfm)	System Flow Rate (in. H <sub>2</sub> O)	System Inf. Conc. (ppmv)	System Temp (deg. F)	Extraction wells open:	Flow DP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg.)	Slinger Depth (ft)	Slinger Depth (in.)	
13:15	3.0	126	120	2.50	132	150	1448	125	1443	80	71	150	13.6	1.45	98	100	9.2
13:45	3.0	124	119	2.50	132	150	1449	125	1449	80	71	150	13.6	1.45	98	100	9.2
14:15	3.0	125	120	2.50	132	140	1449	125	1449	80	71	150	13.6	1.45	98	100	9.2
14:45	3.0	125	118	2.50	132	140	1444	125	1444	80	71	150	13.6	1.45	98	100	9.2
15:15	3.0	125	118	2.50	132	140	1444	125	1444	80	71	150	13.6	1.45	98	100	9.2
15:45	3.0	125	118	2.50	132	140	1443	125	1443	80	71	150	13.6	1.45	98	100	9.2
16:15	3.0	125	118	2.50	132	140	1447	125	1447	80	71	150	13.6	1.45	98	100	9.2
16:45	3.0	125	118	2.50	132	140	1449	125	1449	80	71	150	13.6	1.45	98	100	9.2
17:15	3.0	124	118	2.50	132	140	1448	124	1448	80	71	150	13.5	1.45	98	100	9.1
17:45	2.9	124	117	2.50	132	140	1450	117	1450	80	71	150	13.5	1.45	98	100	9.1
18:15	3.0	115	118	2.50	132	150	1445	115	1445	80	71	150	13.5	1.45	98	100	9.1
18:45	3.0	117	119	2.50	132	140	1443	117	1443	80	71	160	13.5	1.50	99	100	9.2
19:15	2.9	119	117	2.50	132	140	1447	119	1447	80	71	150	13.6	1.45	98	100	9.1
19:45	3.0	120	118	2.50	132	140	1449	120	1449	80	71	150	13.6	1.45	98	100	9.1
20:15	3.0	120	117	2.50	132	150	1452	120	1452	80	71	160	13.5	1.50	99	100	9.1
20:45	2.9	120	118	2.50	132	140	1448	120	1448	80	71	160	13.5	1.50	99	100	9.1
21:15	3.0	123	119	2.50	132	140	1445	123	1445	80	71	150	13.6	1.45	98	100	9.1
21:45	3.0	125	120	2.50	132	140	1447	125	1447	80	71	150	13.5	1.45	98	100	9.1
22:15	3.0	124	119	2.50	132	150	1444	124	1444	80	71	150	13.6	1.45	98	100	9.1
22:45	3.0	125	120	2.50	132	140	1449	125	1449	80	71	150	13.6	1.45	98	100	9.1

NOTES:

(Globe C) Defect 4999 fuel tank (before) empty / R6

13B

	Extraction Well # 4			Extraction Well # 5			Extraction Well # 3			Extraction Well # 2			Extraction Well # 1				
	VW - 133			VW - 133			VW - 133			VW - 133			VW - 133				
	Extraction Well #	Flow (24 hr.)	Flow ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)
13:15																	
13:45	.85	74	80	13.3			.80	71	230	13.8		1.20	89	220	10.8		
14:15																	
14:45	.85	74	80	13.2			.80	71	230	13.7		1.20	89	220	10.8		
15:15																	
15:45	.85	74	70	13.1			.80	71	230	13.7		1.20	89	220	10.8		
16:15																	
16:45	.85	74	70	13.1			.80	71	230	13.7		1.20	89	210	10.8		
17:15																	
17:45	.85	74	70	13.1			.80	71	230	13.7		1.20	89	210	10.8		
18:15																	
18:45	.85	74	80	13.0			.80	71	240	13.8		1.20	89	220	10.8		
19:15																	
19:45	.85	74	80	13.2			.80	71	230	13.7		1.20	89	220	10.8		
20:15																	
20:45	.85	74	80	13.1			.80	71	240	13.7		1.20	89	210	10.7		
21:15																	
21:45	.80	71	70	13.0			.82	71	240	13.8		1.20	89	210	10.8		
22:15																	
22:45	.85	74	80	13.1			.85	74	230	13.5		1.20	89	220	10.8		
Notes:	ADDED SIGHT H <sub>2</sub> O	17:50															
Took 2 TDS from 9:28:05 to office for STL p/u AM 9/30/05 RG																	
Observation H <sub>2</sub> O sight glass has possibly 15 hrs before memory refills! RG																	
79670 gal's H <sub>2</sub> O Total run 18:00 hrs of fine H <sub>2</sub> O																	

# TRC

Customer-Focused Solutions

MTS Unit #: 0234

Client: Carlos Phillips

Site: 0353  
Date: 9-29-05 - 10/1/05

## MTS FIELD DATA

Project No.: 0234

Task No.:

Sheet: 1/4A

Technician: pcc

Date: 9-29-05

Time:

### CUMULATIVE WELLS

TOTALIZER START (gallons):

Time:

WELL ID: UW-1A

EXTRACTION WELL #2

Time:

DEPTH to FP (ft):

Time:

TOTAL DEPTH(ft):

# TRC

Site: 0353  
Date: 9-29-05 - 10-1-05

Customer-Focused Solutions

## MTS FIELD DATA

Continuation Sheet

Extraction Well # 3

Extraction Well # 4

Extraction Well # 5

Extraction Well # 6

Project No.:

DTW (ft):

DEPTH TO FP (ft):

TOTAL DEPTH (ft):

CASING DIA. (in.):

	Flow ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)
23:45	.85	71	90	132	17	.80	71	240	134	17	1.70	89	220	10.8	17
20:15	.80	71	80	13.0		.80	71	230	13.8		1.70	89	210	10.6	
00:45	.85	74	80	13.0		.80	71	230	13.4		1.70	89	230	10.8	
01:15	.85	74	80	13.1		.85	74	230	13.8		1.70	89	220	10.6	
01:45	.85	74	80	13.2		.86	71	240	13.5		1.70	89	220	10.8	
02:15	.86	71	90	13.2		.86	71	240	13.5		1.70	89	220	10.8	
02:45	.85	74	80	13.1		.80	71	230	13.8		1.70	89	230	10.9	
03:15	.85	74	90	13.2		.80	71	240	13.5		1.70	89	220	10.9	
03:45	.80	74	60	13.3		.75	71	200	13.8		1.15	90	180	11.1	
04:15	.85	74	60	13.4		.80	71	210	13.9		1.15	87	180	11.0	
04:45	.85	74	60	13.4		.80	71	220	13.9		1.20	89	190	11.1	
Notes:															

C:\noco



Client: Phillip  
 Site: 0353  
 Date: 2-30-05

Customer-Focused Solutions  
 MTS Unit #: 0939

# MTS FIELD DATA

Project No.: 20094809  
 Task No.: 00001  
 Technician: R.G.J.

TOTALIZER START (gallons): Time: \_\_\_\_\_  
 TOTALIZER END (gallons): Time: \_\_\_\_\_  
 STACK HC CONCENTRATION (ppmv): Time: \_\_\_\_\_

## CUMULATIVE WELLS

EXTRACTION WELL #1										EXTRACTION WELL #2									
					WELL ID: <u>VIA - 1 A</u>										WELL ID: <u>VIA - 2 A</u>				
					DTW (ft):										DTW (ft):				
					DEPTH TO FP (ft):										DEPTH (ft):				
					TOTAL DEPTH (ft):														
CASING DIAM. (in.):																			

VACUUM SIDE DATA										PRESSURE SIDE DATA												
Total Well Flow (in. H2O)	Total Well DP (scfm)	Well Flow Rate (scfm)	Total Wall Inf. Conc. (ppmv)	Manifold Vacuum (in. of Hg)	Manifold Temp (in. of Hg)	Vacuum Temp (in. of Hg)	H2O Temp (in. of Hg)	System Flow Rate (in. H2O)	DP (scfm)	System Flow Rate (in. H2O)	DP (scfm)	Inf. Conc. (ppmv)	System Temp (deg. F)	Conc. (ppmv)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)
9:15			3.0	121	115	2.60	134	1446	1-2							/		1.45	98	100	9.2	/
9:45			3.0	122	115	2.60	134	1448	1-2							/		1.45	98	100	9.2	/
10:15			2.0	122	115	2.00	124	1444														
10:45			3.0	123	118	2.60	134	1440	1-2													
11:15			3.0	122	120	2.60	124	1448	1-2													
11:45			3.0	122	118	2.60	134	1446														
12:15			3.0	122	117	2.60	134	1448														
12:45			3.0	123	116	2.60	134	1446														
13:15			3.0	125	118	2.60	134	1447														
13:45			3.0	125	119	2.60	134	1447														
14:15			2.9	124	118	2.55	133	1444														
14:45			2.9	123	117	2.55	133	1445														
15:15			2.9	123	116	2.50	132	1443														
15:45			2.9	122	115	2.50	132	1444														
16:15			2.9	121	114	2.50	132	1446														
16:45			2.9	120	113	2.50	132	1448														
17:15			3.0	105	98	2.30	126	1445														
17:45			3.0	110	103	2.35	127	1440														
18:15			3.0	115	110	2.50	132	1450														
18:45			3.0	115	110	2.50	132	1455														

NOTES: H2O RODDED to Seal tank at 2:00 to 5:15 pm (timer)



0357

Site: Date: 9/36/03

Continuation Sheet

Customer-Focused Solutions

**MTS FIELD DATA**

Project No.: 20094809/0001

## Extraction Well #

Well ID: Vw-3B

## Extraction Well #

DTW (ft):

## DEPTH TO FP (ft):

TOTAL DEPTH (ft):

## CASING DIA. (in):

## Extraction Well #

Well ID: Vw-1B

## Extraction Well #

DTW (ft): Vw - 20

## DEPTH TO FP (ft):

TOTAL DEPTH (ft):

## CASING DIA. (in):

Time (24 hr.)	Flow ΔP (in. H2O)	Flow Rate (scfm)	H/C Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow ΔP (in. H2O)	Flow Rate (scfm)	H/C Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow ΔP (in. H2O)	Flow Rate (scfm)	H/C Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	
01:15	.90	74	70	13.4	20	1	.80	71	220	13.8	1	1.20	89	160	11.0	1
01:45	.85	74	80	13.4			.80	71	220	13.8		1.20	89	200	11.0	
02:15	.85	74	80	13.4			.80	71	220	13.8		1.20	89	240	11.0	
02:45	.85	74	70	13.4			.80	71	210	13.9		1.20	89	190	11.1	
03:15	.85	74	70	13.4			.80	71	200	13.9		1.20	89	190	11.1	
03:45	.85	74	70	13.4			.80	71	200	13.9		1.20	89	190	11.1	
04:15	.85	74	70	13.3			.80	71	210	13.8		1.20	89	190	11.0	
04:45	.85	74	70	13.3			.80	71	210	13.8		1.20	89	190	11.0	
05:15	.85	74	70	13.3			.75	69	200	13.8		1.15	87	180	10.9	
05:45	.85	74	70	13.3			.75	69	200	13.8		1.15	87	180	10.8	
06:15																
06:45	.85	74	70	13.3			.75	69	200	13.8		1.15	87	180	10.8	
07:15																
07:45	.75	70	70	13.5			.70	69	200	14.2		1.10	88	180	11.2	
08:15																
08:45	.85	74	60	13.3			.80	71	210	13.8		1.15	87	180	10.9	

Notes:

Conoco Phillips

**TRC**

Customer-Focused Solutions  
MTS Unit #: 0934

# MTS FIELD DATA

Sheet: 16A / 1  
Project No.: 20094009  
Task No.: U1001

Technician: PL

Date: 03/05/05 - 10-1-05

Laptop Unit #:

## CUMULATIVE WELLS

TOTALIZER START (gallons):  
TOTALIZER END (gallons):  
STACK HC CONCENTRATION (ppmv):

Time:  
Time:  
Time:

## VACUUM SIDE DATA

EXTRACTION WELL #1		EXTRACTION WELL #2			
WELL ID: UW-1A		WELL ID: UW-2A			
DTW (ft):					
DEPTH TO FP (ft):					
TOTAL DEPTH (ft):					
CASING DIAM. (in):					

Time (24 hr.)	Total Well Flow DP (in. H2O)	Total Well Flow Rate (scfm)	Manifold Vacuum (in. of Hg)	VACUUM SIDE DATA		PRESSURE SIDE DATA									
				Yard + Temp Temp	H <sub>2</sub> O Temp	System Flow DP (in. H2O)	System Flow Rate (scfm)	System Infl. Conc. (ppmv)	System Temp (deg. F)	Extraction wells open:	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)
01:15			2.9	116	110	2.50	132	120	1448	175					1
14:45			3.0	117	110	2.55	133	120	1452						
20:15			3.0	114	112	2.50	132	130	1444						
20:45			3.0	118	111	2.55	133	120	1448						
21:15			2.9	119	112	2.50	132	120	1450						
21:45			3.1	118	113	2.50	132	110	1443						
22:15			3.0	117	112	2.55	133	120	1447						
22:45			3.1	118	113	2.50	132	110	1445						
23:15			3.0	118	111	2.55	133	120	1448						
23:45			3.0	116	113	2.50	132	120	1445						
00:15			3.1	118	111	2.50	132	110	1445						
00:45			3.0	117	112	2.50	132	110	1447						
01:15			3.0	120	111	2.55	133	120	1451						
01:45			3.0	118	113	2.50	132	110	1449						
02:15			3.1	118	111	2.55	133	120	1445						
02:45			3.1	120	113	2.55	133	120	1449						
03:15			3.0	119	114	2.50	132	120	1446						
03:45			3.0	120	113	2.50	132	110	1449						
04:15			3.0	118	112	2.50	132	110	1448						
04:45			3.0	120	113	2.55	133	120	1449						

NOTES:



**TRC**Client: Conoco PhillipsSite: D353  
Date: 10-1-05**MTS FIELD DATA**Customer-Focused Solutions  
MTS Unit #: 0939TOTALIZER START (gallons):  
Time: \_\_\_\_\_TOTALIZER END (gallons):  
Time: \_\_\_\_\_STACK HC CONCENTRATION (ppmv):  
Time: \_\_\_\_\_

## CUMULATIVE WELLS

Time: \_\_\_\_\_

Time: \_\_\_\_\_

Time: \_\_\_\_\_

Time: \_\_\_\_\_

Time: \_\_\_\_\_

## VACUUM SIDE DATA

Time: \_\_\_\_\_

## EXTRACTION WELL #1

WELL ID: WD-1ADTW (ft): 100DEPTH to FP (ft): 100TOTAL DEPTH(ft): 100CASING DIAM. (in.): 7

## EXTRACTION WELL #2

WELL ID: WD-2ADTW (ft): 100DEPTH to FP (ft): 100TOTAL DEPTH(ft): 100CASING DIAM. (in.): 7

## PRESSURE SIDE DATA

System Flow DP (in. H<sub>2</sub>O)

System Flow Rate (scfm)

Manifold Vacuum (in. of Hg)

Inf. Conc. (ppmv)

System Flow DP (in. H<sub>2</sub>O)

System Flow Rate (scfm)

Manifold Vacuum (in. of Hg)

Inf. Conc. (ppmv)

System Temp (deg. F)

System Inf. Conc. (ppmv)

Extraction wells open:

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

Vacuum (in. of Hg)

Slinger Depth (ft)

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

(in. of Hg)

Stringer Depth (ft)

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

(in. of Hg)

Stringer Depth (ft)

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

(in. of Hg)

Stringer Depth (ft)

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

(in. of Hg)

Stringer Depth (ft)

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

(in. of Hg)

Stringer Depth (ft)

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

(in. of Hg)

Stringer Depth (ft)

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

(in. of Hg)

Stringer Depth (ft)

Flow DP (in. H<sub>2</sub>O)

Flow Rate (scfm)

HC Conc. (ppmv)

(in. of Hg)

① D5:05 added water to fill tank  
 5:45 to 7:15 Drave Puff Back to SFS yard So it would have to ride home! R6.

NOTES:

**TRC****MTS FIELD DATA**Site: 0353  
Date: 10/1/05

Customer-Focused Solutions

Continuation Sheet

Project No.: 20049309/4001

Extraction Well # 5

	Extraction Well # 3	Extraction Well # 4	Extraction Well # 5	Extraction Well # 6
DTW (ft)	Well ID: VW-3B	VW-1B	VW-2B	
DEPTH TO FP (ft)				
TOTAL DEPTH (ft)				
CASING DIA. (in)				

Time (24 hr.)	Flow (lb H <sub>2</sub> O)	ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow (lb H <sub>2</sub> O)	ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow (lb H <sub>2</sub> O)	ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	
05:45	85	74	60	13.3		7	75	69	190	14.0		77	115	87	180	11.0		77	
6:45	80	74	40	13.3			75	69	180	14.0			1:15	87	160	11.0			
7:45	80	74	40	13.3			75	69	190	14.0			2:15	87	160	11.0			
8:45	85	74	60	13.3			80	74	190	13.8			3:15	87	170	11.0			
9:45	85	74	60	13.3			80	74	190	13.8			4:15	87	170	11.0			
10:45	85	74	60	13.3			80	74	180	13.7			5:15	87	170	10.9			
11:15																			

Notes:



## MTS Field Data

Site:

Continuation Sheet

Date:

18/3

06.15.2005

1:42AM

NO. 655

P. 3

Extraction Well #										Extraction Well #															
V.W - 30					V.W - 13					V.W - 23					V.W - 23										
Time		Flow (in. H2O)		Flow Rate (scfm)		HC Conc. (ppmv)		Stinger Depth (ft)		Flow Rate (in. H2O)		HC Conc. (ppmv)		Vacuum (in. of Hg)		Stinger Depth (ft)		Flow Rate (in. H2O)		HC Conc. (ppmv)		Vacuum (in. of Hg)			
Start	10:45AM	85	74	40	13.4	1	85	74	160	13.8	1	125	91	130	11.0	1	125	91	130	11.0	1	125	91	130	11.0
10:50AM	10:50AM	85	74	50	13.4	1	80	73	150	13.8	1	120	90	140	11.2	1	120	90	140	11.2	1	120	90	140	11.2
10:55AM	10:55AM	80	73	20	13.5	1	80	73	130	13.8	1	120	90	110	11.2	1	120	90	136	10	1	120	90	136	10
11:00AM	11:00AM	20	126	0	5.0	1	240	133	10	5.1	1	250	136	10	4.6	1	250	136	10	4.6	1	250	136	10	4.6
11:05AM	11:05AM	50	55	0	5.0	1	45	52	10	5.2	1	65	63	0	4.6	1	65	63	0	4.6	1	65	63	0	4.6
11:10AM	11:10AM	2.28	129	0	5.1	1	245	134	10	5.0	1	250	136	10	4.5	1	250	136	10	4.5	1	250	136	10	4.5
11:15AM	11:15AM	50	55	0	5.1	1	50	55	10	5.1	1	65	63	0	4.6	1	65	63	0	4.6	1	65	63	0	4.6
11:20AM	11:20AM	245	134	10	5.0	1	280	136	70	5.2	1	270	142	60	4.5	1	270	142	60	4.5	1	270	142	60	4.5
11:25AM	11:25AM	50	60	0	4.9	1	50	55	20	5.9	1	70	68	20	4.5	1	70	68	20	4.5	1	70	68	20	4.5
11:30AM	11:30AM	245	133	0	5.0	1	240	133	0	5.1	1	230	129	10	4.5	1	230	129	10	4.5	1	230	129	10	4.5
11:35AM	11:35AM	30	45	0	5.0	1	30	43	90	5.1	1	40	50	60	4.5	1	40	50	60	4.5	1	40	50	60	4.5
11:40AM	11:40AM	129	129	10	5.0	1	129	129	20	5.1	1	240	133	20	4.6	1	240	133	20	4.6	1	240	133	20	4.6
11:45AM	11:45AM	45	20	6.0	5.0	1	30	43	80	5.1	1	40	50	40	4.6	1	40	50	40	4.6	1	40	50	40	4.6
11:50AM	11:50AM	129	129	5.0	5.0	1	240	133	45	5.0	1	230	129	30	4.6	1	230	129	30	4.6	1	230	129	30	4.6
11:55AM	11:55AM	30	43	0	5.0	1	30	43	70	5.1	1	40	50	120	4.5	1	40	50	120	4.5	1	40	50	120	4.5
12:00PM	12:00PM	30	43	0	5.0	1	30	43	70	5.1	1	45	54	30	4.6	1	45	54	30	4.6	1	45	54	30	4.6
12:05PM	12:05PM	129	10	5.0	5.0	1	240	133	50	5.0	1	240	133	20	4.6	1	240	133	20	4.6	1	240	133	20	4.6
12:10PM	12:10PM	43	0	5.0	5.0	1	30	43	10	5.1	1	40	50	40	4.6	1	40	50	40	4.6	1	40	50	40	4.6
12:15PM	12:15PM	129	10	5.0	5.0	1	240	133	20	5.3	1	230	129	30	4.6	1	230	129	30	4.6	1	230	129	30	4.6
12:20PM	12:20PM	43	0	5.0	5.0	1	30	43	40	5.3	1	40	50	50	4.6	1	40	50	50	4.6	1	40	50	50	4.6

Notes:

# TRC

Client: **Coneco Phillips**  
 Site: **0353**  
 Date: **10/13/05 → 10/20/05**

# MTS FIELD DATA

Customer-Focused Solutions  
 MTS Unit #: **0934**

Project No.: **20094810**

Task No.: **Y003**

Technician: **PJ**

Sheet: **194 / 1**  
**EXTRACTION WELL #2**

Project No.: **20094810**

Task No.: **Y003**

Technician: **PJ**

**CUMULATIVE WELLS**

Time:

Time:

Time:

Time:

Time:

Time:

**VACUUM SIDE DATA**

Time (24 hr.)	<b>PRESSURE SIDE DATA</b>						System Flow DP (in. H <sub>2</sub> O)	System Flow Rate (scfm)	System Inl. Conc. (ppmv)	System Temp (deg. F)	Extraction well: open	Flow DP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft.)	Flow DP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft.)
	Total Well Flow (in. H <sub>2</sub> O)	Total Wall Flow Rate (scfm)	Manifold Vacuum (in. of Hg)	Temp H2O	Manifold Vacuum (in. of Hg)	Temp H2O															
3/05 7:30AM Thurs	10/13 PL	2.4	114	106	2.70	142	40	145	175	2.10	123	40	5.3	1'	2.00	120	30	4.2	1'		
7:30AM 1.00	80	50	2.4	112	—	—	—	144	175	35	45	50	5.4	1'	40	50	50	4.2	1'		
8:00AM Fri.	10/14 PL	2.4	117	109	2.60	139	50	144	175	2.10	123	20	5.3	1'	2.05	122	20	4.2	1'		
1/6 8:00AM Sat.	90	75	2.6	113	102	—	—	145	175	3.05	45	30	5.3	1'	40	50	30	4.2	1'		
1/6 7:00AM Sat.	10/15 PL	2.5	115	105	2.70	142	30	146	175	2.05	121	20	5.4	1'	2.10	123	20	4.1	1'		
1/6 7:00AM Sun.	95	77	50	2.4	114	102	—	145	175	3.05	45	30	5.4	1'	40	50	30	4.2	1'		
1/6 7:30AM Sun.	10/16 PL	2.3	117	105	2.60	139	20	144	175	2.10	123	10	5.3	1'	2.05	122	30	4.0	1'		
1/6 7:30AM 90	75	30	2.3	116	103	—	—	144	175	4.0	50	30	5.4	1'	40	50	50	4.0	1'		
1/6 9:00AM Mon.	10/17 PL	2.3	102	84	2.70	142	30	145	175	2.10	123	2	5.3	1'	2.00	120	20	4.1	1'		
1/6 9:00AM Tue.	10/18 PL	2.4	101	87	—	—	—	144	175	3.35	45	20	5.3	1'	2.35	45	40	4.1	1'		
1/6 10:00AM 1.00	80	50	2.5	120	96	2.50	134	145	175	1.75	112	30	5.0	1'	1.80	113	20	3.6	1'		
1/6 10:00AM 1.00	80	50	2.5	119	96	—	—	144	175	2.5	39	40	5.0	1'	2.20	34	30	3.6	1'		
1/6 10:30AM Wed.	10/19 PL	2.3	91	86	1.70	110	30	144	175	1.50	103	0	4.4	1'	1.55	105	0	3.5	1'		
1/6 10:30PM 70	66	40	2.3	93	82	—	—	144	175	2.0	33	10	4.4	1'	2.25	39	10	3.5	1'		
1/6 11:00PM Thurs	10/20 PL	2.6	118	105	1.55	105	20	144	175	1.01	101	0	4.2	1'	1.50	103	0	3.5	1'		
1/6 11:00PM 50	57	30	2.6	118	105	—	—	144	175	20	33	10	4.2	1'	2.25	39	10	3.5	1'		

NOTES: **①** 11:00AM 10/13/05 took vapor samples on wells VW-1C, VW-2A, VW-3C, @ 11:00. **②** Delt off wells. **③** 10:00 AM 10/13/05 @ 10:00 AM pulled off well VW-1A, VW-2A, VW-3B. Hook up new wells, VW-1C, VW-2C, VW-3C. **④** 10/19/05 took vapor samples on wells VW-1C, VW-2C, VW-3C. @ 10:30AM **⑤** 10/20/05 took vapor samples on wells VW-1C, VW-2C, VW-3C. @ 10:30AM and running system. **⑥** 10/20/05 took vapor samples on wells VW-1C, VW-2C, VW-3C. @ 11:00. **⑦** Delt off wells. **⑧** 10/13/05 @ 10:00 AM pulled off well VW-1A, VW-2A, VW-3B. Hooked up new wells, VW-1C, VW-2C, VW-3C. **⑨** See page 20A/20B Rev A

Site: 0353 Date: 10/13/05 → 10/10/05

Customer-Focused Solutions

Well ID: WJ-3B

## Extraction Well #

WJ-1B

DTW (ft.)

10/3/05 -  
10/18/05

DEPTH TO FP (ft.)

10/18/05  
TOTAL DEPTH (ft.)WJ-3C  
10/19/05

CASING DIA. (in.)

	Extraction Well #								Extraction Well #							
	WJ-3B				WJ-1B				WJ-3B				WJ-1B			
	Time (24 hr.)	Flow ΔP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft.)	Flow ΔP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft.)	Flow ΔP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft.)
1. 7:30AM	1.95	1/8	10	5.2	1'	2.10	12.3	30	5.4	1'	2.20	12.6	40	4.8	1'	
2. 7:30AM	.25	39	10	5.2	1'	.35	46	50	5.4	1'	.40	50	50	4.8	1'	
3. 8:00AM	2.02	120	10	5.2	1'	2.10	12.3	30	5.3	1'	2.10	12.3	30	4.8	1'	
4. 8:00AM	.30	43	20	5.2	1'	.40	50	40	5.3	1'	.35	46	40	4.8	1'	
5. 7:00AM	2.20	120	10	5.1	1'	2.05	12.1	20	5.4	1'	2.15	12.5	30	4.9	1'	
6. 7:00AM	.30	43	20	5.1	1'	.35	44	80	5.4	1'	.40	50	40	4.8	1'	
7. 7:30AM	2.05	121	10	5.2	1'	2.10	12.1	10	5.3	1'	2.20	12.6	30	4.7	1'	
8. 7:30AM	.25	34	10	5.2	1'	.40	50	20	5.3	1'	.35	46	40	4.8	1'	
9:00AM	2.00	120	10	5.1	1'	2.00	12.0	20	5.4	1'	2.10	12.3	20	4.5	1'	
9. 9:00AM	.30	43	10	5.2	1'	.35	44	30	5.4	1'	.30	43	40	4.6	1'	
10. 10:00AM	1.80	113	10	4.6	1'	1.75	11.2	30	4.4	1'	1.90	11.7	30	4.2	1'	
11. 10:00AM	.26	34	10	4.5	1'	.20	34	40	4.5	1'	.25	35	50	4.2	1'	
12. 10:30AM	1.50	103	10	4.3	1'	1.45	101	40	4.2	1'	1.50	103	60	4.0	1'	
13. 10:30AM	.20	34	10	4.3	1'	.15	30	50	4.2	1'	.20	34	80	4.0	1'	
14. 11:00AM	1.55	105	10	4.2	1'	1.50	103	70	4.3	1'	1.55	105	40	4.1	1'	
15. 11:00AM	.20	34	10	4.2	1'	.20	34	30	4.3	1'	.20	34	60	4.1	1'	

Notes:

Client: Connie Phillips  
Site: 0353  
Date: 10/20/05

# TRC MTS FIELD DATA

Customer-Focused Solutions  
MTS Unit #: 0934

Sheet: 20A /  
Project No.: 20094810  
Task No.: 1023  
Technician: fm;

## CUMULATIVE WELLS

TOTALIZER START (gallons): Time: WELL ID: MW-1A  
TOTALIZER END (gallons): Time: MW-3A  
STACK HC CONCENTRATION (ppmv):

## EXTRACTION WELL #1

WELL ID: MW-1A  
DTW (ft): DEPTH to FP (ft): 10/20-10-11  
TOTAL DEPTH(ft): 44'

CASING DIAM. (in): 7"  
TIME: 8:30 AM 10/21

## VACUUM SIDE DATA

Total Well Flow (24 hr.)	Total Well Flow DP (in. HgO)	Well Flow Rate (scfm)	Manifold Vacuum (in. of Hg)	System Flow DP (in. HgO)	System Flow Rate (scfm)	System Inf. Conc. (ppmv)	System Temp (deg. F)	Extraction wells open:	Flow DP (in. HgO)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow DP (in. HgO)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	
11:30AM Thurs	10/20	PL	3.0	122	110	1.70	110	-	1445	174	1.30	95	10	6.0	1'	1.25	93	10	6.2
120/1130AM	600	63	6.0	3.0	120	109	-	-	1446	174	1.5	30	6.0	1'	1.5	30	20	6.2	
8:30AM Fri.	10/21	PL	3.0	118	107	1.70	110	20	1450	174	1.30	95	8	6.1	1'	1.20	91	8	6.2
121 8:00AM Sat.	55	58	4.0	3.0	108	109	-	-	1451	174	1.0	22	10	6.1	1'	1.0	22	10	6.2
122 6:00AM Sun.	10/22	PL	2.8	123	110	2.00	120	30	1444	173	1.55	105	10	4.2	1'	1.55	105	10	4.2
123 6:00AM Sun.	45	50	2.8	123	111	-	-	-	1446	173	2.0	33	20	4.2	1'	.20	33	20	4.2
123 7:00AM Sun.	10/23	PL	3.0	127	115	1.65	108	20	1448	173	1.45	101	10	4.2	1'	1.55	105	10	4.2
123 7:00AM Sun.	40	48	3.0	127	115	-	-	-	1448	173	1.5	29	20	4.2	1'	.20	33	20	4.2
124 10:30AM Sat.	4.0	101	193	1.30	95	4.0	1446	173	80	73	30	10.1	1'	25	71	30	10.5	1'	
125 9:30AM	4.0	124	112	1.50	103	5.0	1448	173	75	71	30	10.2	1'	.80	73	30	10.6	1'	
126 11:30AM	3.8	103	97	1.55	105	7.0	1446	173	80	73	20	10.1	1'	.80	73	30	10.4	1'	
127 10:00PM	4.0	120	108	1.50	103	4.0	1449	173	80	73	30	10.2	1'	.85	76	20	10.6	1'	

NOTES: ① 11:15 - Hooked up well MW-1A, MW-3A, MW-1B, MW-3A, MW-3B. Took sample on well MW-1A, MW-3A.

② 10:21 AM Took vapor sample on well MW-1A, MW-3A.

③ 8:30 AM 10:105 pull off well MW-1A, MW-3A. Took sample on well MW-1B, MW-3B. Running on only 3 wells - MW-1B, MW-2B, MW-3B.

13:04/105 10:105 took off well MW-1A, MW-3A, MW-1B, MW-3B. Took sample on well MW-1B, MW-2B, MW-3B.

**TRC**

Customer-Focused Solutions

Site: 0353  
Date: 10/20/05**MTS Field Data**

Continuation Sheet

Project No.:

		Extraction Well # 4						Extraction Well # 5					
		Extraction Well # 4			Extraction Well # 5			Extraction Well # 4			Extraction Well # 5		
Time (24 hr.)	Flow (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Flow (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)
11:30AM	1.50	103	20	4.3	1'	1.55	165	40	4.1	1'			
11:30AM	20	34	30	4.3	1'	20	34	60	4.1	1'			
8:00AM	1.55	165	20	4.3	1'	1.50	103	20	3.9	1'			
8:30AM	25	37	40	4.3	1'	20	34	30	3.9	1'			
1:00PM	1.60	106	20	4.1	1'								
X: 1:00PM	25	37	40	4.1	1'								
X: 1:00PM	103	103	30	3.8	1'								
X: 1:00PM	20	34	50	3.8	1'								
ON.	10:30AM	90	78	40	8.2	1'							
ON.	9:30AM	1.00	83	50	8.4	1'							
ON.	11:30AM	1.10	87	40	8.6	1'							
ON.	10:00AM	1.10	87	40	8.6	1'							

Notes:

**TRC**

Client: Conoco Phillips  
 Site: Former 76# 03525  
 Date: 11/14/05

**MTS FIELD DATA**

Customer-Focused Solutions  
 MTS Unit #: 0936

Sheet: 1A / 4B

Project No.: 20594809

Task No.: 11222

Technician: SDP RS

Laptop Unit #:

## EXTRACTION WELL #1

WELL ID: W-123

EXTRACTION WELL #2

WELL ID: VW-235

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

CASING DIAM. (in):

2"WELL ID: W-123

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

2"

## CUMULATIVE WELLS

Time:

## PRESSURE DATA

WELL ID: W-123

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

2"WELL ID: VW-235

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

2"

## VACUUM SIDE DATA

Time:

## SYSTEM DATA

WELL ID: W-123

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

2"WELL ID: VW-235

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

2"

## SAMPLING DATA

WELL ID: W-123

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

2"WELL ID: VW-235

DTW (ft):

DEPTH to FP (ft):

TOTAL DEPTH (ft):

2"

## NOTES:

(9:00) Individual sample taken and lab call for pickup.  
 (9:30)

**TRC**

Site: Forenc 76 #0353  
 Date: 11/14/05

Customer-Focused Solutions

# MTS FIELD DATA

Continuation Sheet

Project No.: 20094809

Extraction Well # 3  
 Well ID: W-333

DTW (ft.)

DEPTH TO FP (ft.)

TOTAL DEPTH (ft.)

CASING DIA. (in.)2"

	Extraction Well #						Extraction Well #					
	Extraction Well #						Extraction Well #					
	Time (24 hr.)	Flow ΔP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow ΔP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow ΔP (in. H2O)
0830	65	66	100	7.6		70c						
0930	65	66	110	7.3								
1030	65	66	110	7.3								
1130	65	66	110	7.3								
1200	65	66	110	7.3								
1230	65	66	90	7.2								
1300	65	66	90	7.2								
1330												
1400	62	64	70	8.1								
1430												
1500	55	60	70	8.0								
1530												
1600	54	60	70	7.8								
1630												
1700	54	60	70	8.0								
1730												
1800	54	60	70	7.8								

Notes:

# TRC

## MTS FIELD DATA

Sheet: 24 / 48

Client: Conoco Phillips  
Site: Borden 76 #0353 Customer-Focused Solutions  
Date: 11-14-25-05

MTS Unit #: 936

### CUMULATIVE WELLS

TOTALIZER START (gallons): 0  
TOTALIZER END (gallons): 0  
STACK HC CONCENTRATION (ppmv): 0  
Time: 20130

EXTRACTION WELL # 1										EXTRACTION WELL # 2									
VW = 16										VW = 23									
Time	Total Well Flow (in. H2O)	Total Well Flow Rate (scfm)	Vacuum Inf. Conc. (ppmv)	Manifold Vacuum (in. of Hg)	System DP	System Flow Rate (scfm)	System Inf. Conc. (ppmv)	System Temp (deg. F)	Extraction wells open:	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Flow DP (in. H2O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)
18:30				16.4	.75	21	60	1447	1+3	.75	60	60	70	72	.60	63	70	72	70
19:00				16.4	.75	21	60	1447	.55	60	60	80	2						
19:30				16.5	.75	21	50	1447											
20:00				16.4	.76	71	50	1448											
20:30				16.4	.75	71	50	1447											
21:00				16.6	.75	71	50	1449											
21:30				16.5	.75	71	50	1447											
22:00				16.5	.75	71	50	1449											
22:30				16.5	.75	71	50	1448											
23:00				16.7	.70	69	60	1447	.50	57	60	8.2	.60	63	70	7.2			
23:30				16.7	.70	69	60	1447											
24:00				16.8	.70	69	60	1448											
00:30				16.8	.75	71	60	1448											
01:00				16.6	.70	69	60	1447	.10	50	60	8.2	.50	57	60	7.0			
01:30				16.5	.65	66	50	1446											
02:00				16.5	.55	60	50	1449											
02:30				16.4	.50	57	50	1447											
03:00				16.3	.50	57	50	1446											
03:30				16.5	.50	57	50	1447											
04:00				16.4	.50	57	50	1448											
NOTES:  20:00-00:00 PMID (mid-dump) Teflars or All 3 off gass 22:00 Recovery had to be short (I arranged touring for my latest (bf) 22:40 Arts Zebra's Harbor it was showing -10																			

**TRC****MTS FIELD DATA**  
Continuation SheetSite: #0353 Date: 11-14-15-05  
Customer-Focused Solutions218/4B  
20094809Extraction Well # 7  
Well ID: VWF-3B

DTW (ft):

DEPTH TO FP (ft):

TOTAL DEPTH (ft):

CASING DIA. (in):

	Extraction Well #			Extraction Well #			Extraction Well #		
Project No.:	Extraction Well #	Extraction Well #	Extraction Well #	Extraction Well #	Extraction Well #	Extraction Well #	Extraction Well #	Extraction Well #	Extraction Well #
Time (24 hr.)	Flow ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Stinger Depth (ft)	Flow ΔP (in. H <sub>2</sub> O)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)
1830	.55	60	50	702	762				
1920	.55	60	60	82					
1930									
2010	.50	57	50	8.4					
20130									
21100	.50	57	50	8.0					
21130									
22100									
22130									
23100	.50	57	60	8.1					
23130									
24100	.50	57	60	8.0					
0130									
01:00	4.0	50	60	8.0					
01:30									
02:00	.35	47	50	7.9					
02:30									
03:00	4.0	50	60	8.0					
03:30									
04:00	4.0	50	50	8.0					
Notes:									

**TRC****MTS FIELD DATA**

Client: Glenco Phillips  
 Site: Farmar #65553  
 Date: 11/15/05

Customer-Focused Solutions  
 MTS Unit #: 936

## CUMULATIVE WELLS

TOTALIZER START (gallons):  
 TOTALIZER END (gallons):  
 STACK HC CONCENTRATION (ppmv):

Time:

Time:

Time:

## VACUUM SIDE DATA

Time (24 hr.)	VACUUM SIDE DATA				PRESSURE SIDE DATA				System Temp (deg. F)	System Infl. Conc. (ppmv)	Extraction wells open:	Flow DP (in. H <sub>2</sub> O)	Flow DP (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)	Slinger Depth (ft)	Flow Rate (scfm)	HC Conc. (ppmv)	Vacuum (in. of Hg)	Slinger Depth (ft)
	Total Well Flow Qp (in. H <sub>2</sub> O)	Total Well Flow Rate (scfm)	Manifold Vacuum (in. of Hg)	Well Infl. Conc. (ppmv)	System Flow DP (in. H <sub>2</sub> O)	System Flow Rate (scfm)	System Infl. Conc. (ppmv)	System Temp (deg. F)													
04:30	4.0	16.4	45	54	520	1447	173													TBC	
05:00	4.0	16.2	45	54	520	1448	173													TBC	
05:30	4.1	16.4	50	57	520	1446	173													TBC	
06:00	4.0	16.5	50	57	520	1447	173													TBC	
06:30	3.8	16.5	60	63	40	1447	173													TBC	
07:00	3.8	16.5	70	68	50	1448	173													TBC	
07:30	3.8	16.5	70	68	60	1447	173													TBC	
08:00	3.8	16.5	70	68	60	1448	173													TBC	
08:30	3.9	16.5	75	71	60	1448	173													TBC	
09:00	VW-1A, 2A, 3A online.	3.7	16.4	75	71	60	1449	173												TBC	
09:30	VW-1A, 2A, 3A online.	3.6	16.4	80	74	40	1441	173												TBC	
10:00		3.2	16.1	75	71	50	1449	173												TBC	
10:30		3.0	16.2	75	71	60	1447	173												TBC	
11:00		3.5	16.5	75	71	50	1449	173												TBC	
11:30		3.5	16.5	75	71	60	1449	173												TBC	
12:00		3.3	16.5	75	71	50	1440	173												TBC	
12:30		3.4	16.5	75	71	50	1447	173												TBC	
13:00		3.5	16.5	75	71	40	1448	173												TBC	
13:30		3.5	16.5	75	71	40	1448	173												TBC	
14:00																					

NOTES:

(0830) Vapor Samp (2 wells) VW-1B, 2B, 3B. 2 secure wells

(0845) VW-1A, 2A, 3A analysis. (0930) Water Sample VW-1A, 2A, 3A.

(1010) Carbon assist to flv gas samples.

EXTRACTION WELL #1										EXTRACTION WELL #2											
WELL ID: VW-1B/VW-1A					WELL ID: VW-2B/VW-2A					WELL ID: VW-3B/VW-3A					WELL ID: VW-4B/VW-4A						
Laptop Unit #:		Task No.:		Technician:		Laptop Unit #:		Task No.:		Technician:		Laptop Unit #:		Task No.:		Technician:		Laptop Unit #:		Task No.:	
Project No.: 20094809	Y0021	PL; BD																			
Sheet: 3A 1/4B																					

**TRC**

Customer-Focused Solutions

**#035-3**  
Site: \_\_\_\_\_  
Date: 11/15/05

**MTS Field Data**

## Continuation Sheet

**3B / 4B**  
Project No.: 20094809

		Extraction Well # 3			Extraction Well #			Extraction Well #		
Well ID:	WHS-3B	Flow	Flow Rate	HC Conc.	Flow	Flow Rate	HC Conc.	Flow	Flow Rate	HC Conc.
DTW (ft):		(in. H2O)	(scfm)	(ppmv)	(in. H2O)	(scfm)	(ppmv)	(in. H2O)	(scfm)	(ppmv)
Depth to FP (ft):										
Total Depth (ft):										
Casing Diam. (in.):	2 1/4									
04:30		45	54	50	8.0					
05:00		50	57	50	8.1					
05:30										
06:00										
06:30										
07:00		57	60	7.7						
07:30										
08:00										
08:30										
09:00										
09:30		57	50	8.0						
10:00										
10:30										
11:00										
12:00										
12:30										
13:00										
13:30										

Notes:



Customer-Focused Solutions  
#20353 Ferguson The #20353

MTS FIELD DATA

**Continuation Sheet**

Customer-Focused Solutions  
#20353 Ferguson The #20353

4B / 4B

20094802

Date: 1/15/05 Comment: Cesssed 300V/0.1S

Project No.: 20094809

**Extraction Well #**

Well ID: W3-3A

二

FP (ft)

17

### Extraction Well #

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## MTS FIELD DATA

Client: Cancer Prevention  
 Site: Farmhouse 76 #20353  
 Date: 11/15/05

Customer-Focused Solutions  
 MTS Unit #: 0936

Sheet: 4A / 4BProject No.: 20574809Task No.: 0002Technician: DP

## EXTRACTION WELL #2

TOTALIZER START (gallons):	Time:	WELL ID: <u>Ww-1A</u>
TOTALIZER END (gallons):	Time:	DTW (ft):
STACK HC CONCENTRATION (ppmv):	" D "	DEPTH to FP (ft):
		TOTAL DEPTH(ft):

CASING DIAM. (in): <u>2"</u>	WELL UNIT #: <u>Ww-2A</u>
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

CASING DIAM. (in): <u>2"</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #2
	WELL ID: <u>Ww-2A</u>
	DTW (ft):
	DEPTH to FP (ft):

TOTAL DEPTH(ft): <u>21'</u>	EXTRACTION WELL #1
	WELL ID: <u>Ww-1A</u>
	DTW (ft):
	DEPTH to FP (ft):

**Report of Remediation and Confirmation Sampling Activities**

Former 76 Station 0353

January 31, 2006

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**APPENDIX B**

**GLOSSARY OF TERMS AND ABBREVIATIONS  
FOR VAPOR EXTRACTION TEST**

**Report of Remediation and Confirmation Sampling Activities**  
Former 76 Station 0353  
January 31, 2006

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**APPENDIX B**

**GLOSSARY OF TERMS AND ABBREVIATIONS  
FOR VAPOR EXTRACTION TEST**

**Soil Conductivity**

Soil conductivity is defined as a soil parameter proportional to the soil permeability and the properties of the fluid flowing through the porous medium.

**Darcy's Law**

Darcy's law describes the flow mechanism of a fluid in a porous medium; it gives a mathematical relationship between the fluid velocity and the hydraulic gradient under which the fluid is flowing.

**Effective Radius of Influence**

The effective radius of influence is defined as the distance from an air extraction well at which the calculated pressure drawdown is 0.1 in. H<sub>2</sub>O. During the transient period, the radius of influence is a function of extraction time, the soil hydraulic parameters, and the location of recharge boundaries.

**Observation Well**

An observation well is a non-extracting well used to observe the vacuum response at a given distance from the test well. The observation well ideally has a screened casing interval similar to the air extraction well.

**Permeability**

In Darcy's law, the permeability ( $k$ ) is a constant of proportionality that relates the flow velocity and the pressure gradient. In single-phase flow, the permeability is only a function of the porous medium, and has dimensions of length squared.

**Steady-State Flow**

Steady-state flow conditions prevail after a period of air extraction. At steady state, the vacuum impressed at a given distance from an air extraction well does not change as a function of time. The closer an observation well is to an air extraction well the less time is required to reach steady-state flow.

## **Report of Remediation and Confirmation Sampling Activities**

Former 76 Station 0353

January 31, 2006

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### Storativity

Storativity is the volume of air a soil zone releases from, or takes into, storage per unit surface area of the zone per unit change in pressure.

### Test Array

A test array is composed of one vapor extraction well and a number of observation wells used for vacuum monitoring. The number of test arrays depends on the availability of existing monitoring wells that are suitably spaced and constructed (extraction and observation wells with similar screened casing intervals).

### Transient Flow

Transient flow is the early-time flow period that precedes the attainment of steady-state conditions. During this flow period, the vacuum response observed at a given distance changes as a function of elapsed time.

### Transmissibility

Soil transmissibility to air, or the ability of the vadose zone to transmit air to the extraction well, is mathematically defined as the product of the permeability ( $k$ ) of the vadose zone and its thickness ( $h$ ) divided by the average hydrocarbon-saturated air viscosity ( $\mu$ ). The soil transmissibility is used to model subsurface airflow since estimates of the air viscosity and vadose zone flow thickness are not always readily available.

### Transmissivity

Transmissivity is defined as the product of the vadose zone thickness ( $h$ ) and the conductivity of the vadose zone ( $K$ ).

### Vadose Zone

The vadose zone, or unsaturated zone, is the section of soil above the ground water table through which airflow is taking place.